Claims

1. An isolated polynucleotide essentially consisting of :

   (a) a polynucleotide encoding a polypeptide as set forth in SEQ ID NO: 2;

   (b) the nucleotide sequence of SEQ ID NO: 1;

   (c) a nucleotide sequence that has at least 70% identity to the polynucleotide of (a) or (b);

   (d) a polynucleotide consisting of a nucleotide sequence which is capable of hybridising to a polynucleotide according to any one of (a) to (c); or

   (e) a polynucleotide fragment of a polynucleotide according to any one of (a) to (d).

2. A polynucleotide according to claim 1, comprising a nucleotide sequence that has at least 75% identity to a polynucleotide according to (a) or (b).

3. A polynucleotide according to claim 1, comprising a nucleotide sequence that has at least 80% identity to a polynucleotide according to (a) or (b).

4. A polynucleotide according to claim 1, comprising a nucleotide sequence that has at least 85% identity to a polynucleotide according to (a) or (b).

5. A polynucleotide according to claim 1, comprising a nucleotide sequence that has at least 90% identity to the polynucleotide according to (a) or (b).

6. A polynucleotide according to claim 1, comprising a nucleotide sequence that has greater than 95% identity to a polynucleotide according to (a) or (b).

7. A polynucleotide according to claim 1, comprising a nucleotide sequence that has greater than 98% identity to a polynucleotide according to (a) or (b).

8. A polynucleotide according to any one of claims 1 to 7 which encodes a G-protein coupled receptor (GPCR).

9. A polynucleotide probe or primer comprising at least 15 contiguous nucleotides of a polynucleotide according to any one of claims claim 1 to 7.

10. A polynucleotide probe or primer comprising at least 15 contiguous nucleotides of a polynucleotide according to claim 8.

11. A recombinant DNA comprising a polynucleotide sequence according to claim 1.

12. A vector comprising a polynucleotide according to any one of claims 1 to 8.

13. A host cell comprising a polynucleotide according to any one of claims 1 to 8.

14. A host cell transformed or transfected with a vector according to claim 12.

15. A host cell according to claim 13 or claim 14 which is a mammalian, insect, bacterial, fungal, or yeast cell.

16. A polypeptide comprising:

(a) a polypeptide having the deduced amino acid sequence translated from the polynucleotide sequence in SEQ ID NO: 1, and variants, fragments, homologues, analogues and derivatives thereof; or

(b) the polypeptide of SEQ ID NO: 2, and variants, fragments, homologues, analogues and derivatives thereof.

17. A polypeptide of claim 16 consisting of SEQ ID NO: 2.

18. A polypeptide of claim 16 consisting of a variant, fragment, homologue analogue or derivative of the polypeptide of SEQ ID NO: 2.

19. A process for producing a polypeptide according to any one of claims 16 to 18 comprising culturing the host cell according to any one of claims 13 to 15 under conditions sufficient for the expression of said polypeptide.

20. A process according to claim 19, wherein said expressed polypeptide is present at the surface of said cell.

21. A process according to claim 19 or claim 20 which further includes recovering the polypeptide from the culture.

22. A process for producing cells capable of expressing a polypeptide according to any one of claims 16 to 18 comprising transforming or transfecting cells with a vector according claim 12.

23. Cells produced by the process of claim 22.

24. A membrane preparation of the cells according to claim 23.

25. An antibody against a polypeptide according to any one of claims 16 to 18.

26. An agonist which activates a GPCR polypeptide which corresponds to a polypeptide according to any one of claims 16 to 18.

27. An antagonist which inhibits activation of a GPCR polypeptide which corresponds to a polypeptide according to any one of claims 16 to 18.

28. A method for identifying an agonist compound which can bind to and activate a GPCR polypeptide which corresponds to a polypeptide according to any one of claims 16 to 18 comprising:

(a) contacting a compound to be tested with cells expressing on the surface thereof a polypeptide according to any one of claims 16 to 18, or a membrane preparation of said cells, said polypeptide being associated with a second component capable of providing a detectable signal in response to

the binding of an agonist compound to said polypeptide; said contacting being under conditions sufficient to permit binding of agonist compounds to the polypeptide; and

(b) identifying an agonist compound capable of polypeptide binding and activation by detecting the signal produced by said second component.

29. A method for identifying an antagonist compound which can bind to and inhibit activation of a GPCR polypeptide which corresponds to a polypeptide according to any one of claims 16 to 18 comprising:

(a) contacting (i) a detectable first component known to bind to and activate a polypeptide according to any one of claims 16 to 18 and (ii) a compound to be tested with cells expressing on the surface thereof a polypeptide according to any one of claims 16 to 18, or a membrane preparation of said cells, said polypeptide being associated with a second component capable of providing a detectable signal in response to the binding of said detectable first component to said polypeptide; said contacting being under conditions sufficient to permit binding of said detectable first component or agonist compounds to the polypeptide; and

(b) determining the extent to which the binding of the first component to the polypeptide is affected by the test compound, by detecting the absence or otherwise of a signal generated from the interaction of the first component with the polypeptide.

30. Use of an agonist according to claim 26 in the manufacture of a medicament for the treatment of a patient having a condition or disease which can be ameliorated by activation of the GPCR.

31. Use of an antagonist according to claim 27 in the manufacture of a medicament for the treatment of a patient having a condition or disease which can be ameliorated by inhibition of the GPCR.

32. A method for the treatment of a patient having a condition or disease which can be ameliorated by activation of a GPCR corresponding to a polypeptide according to any one of claims 16 to 18 comprising administering to the patient a therapeutically effective amount of an agonist according to claim 26.

33. A method of claim 32, wherein said agonist is a polypeptide and a therapeutically effective amount of the compound is provided by administering to the patient DNA encoding said agonist polypeptide and expressing said agonist polypeptide in vivo.

34. A method for the treatment of a patient having a condition or disease which can be ameliorated by inhibition of a GPCR corresponding to a polypeptide according to any one of claims 16 to 18 comprising administering to the patient a therapeutically effective amount of an antagonist according to claim 27.

35. A method of claim 34, wherein said antagonist is a polypeptide and a therapeutically effective amount of the antagonist polypeptide is provided by administering to the patient DNA encoding said antagonist polypeptide and expressing said antagonist polypeptide in vivo.

36. A method for the treatment of a patient having a condition or disease which can be ameliorated by either activation of, or inhibition of, a GPCR corresponding to a polypeptide according to any one of claims 16 to 18, comprising administering to the patient a therapeutically effective amount of an antibody according to claim 25.

37. Use of an antibody according to of claim 25 in the manufacture of a medicament for the treatment of a patient having a condition or disease which can be ameliorated by either the activation or the inhibition of a GPCR corresponding to a polypeptide according to any one of claims 16 to 18.

38. A method of treatment of a patient having need to upregulate a GPCR corresponding to a polypeptide according to any one of claims 16 to 18,

comprising administering to the patient a therapeutically effective amount of a polypeptide according to any one of claims 16 to 18.

39. A method of claim 38, wherein said therapeutically effective amount of polypeptide is provided by administering to the patient DNA encoding said polypeptide and expressing said polypeptide in vivo.

40. Use of a polypeptide according to any one of claims 16 to 18 in the manufacture of a medicament for the treatment of a patient having need to upregulate a GPCR corresponding to a polypeptide according to any one of claims 16 to 18.

41. Cells or animal genetically engineered to overexpress a polypeptide according to any one of claims 16 to 18.

42. Cells or animal genetically engineered to underexpress a polypeptide according to any one of claims 16 to 18.

43. Cells or animal genetically engineered to exhibit targeted deletion of a polypeptide according to any one of claims 16 to 18.